DOCUMENT RESUME

ED 150 554 CS 003 920

AUTHOR Hicks, Reta D.; Monroe, Eula E.
TITLE A Comparative Analysis Among the Variables of Intelligence, Sex, and Gain Made in Comprehension of Sixth Year Students When Taught Global or Specific Comprehension Skills.
PUB DATE Dec 77
NOTE 11p.; Paper presented at the Annual Meeting of the National Reading Conference (27th, New Orleans, Louisiana, December 1-3, 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Comparative Analysis; Grade 6; Intelligence; Intermediate Grades; *Intermode Differences; *Performance Factors; *Reading Comprehension; *Reading Instruction; *Reading Research; Sex Differences; *Teaching Methods; Vocabulary

ABSTRACT

This study investigated the effectiveness of teaching specific rather than global comprehension skills; the correlations among sex, intelligence level, and comprehension gain when taught global or specific comprehension skills; and the correlations between the factors of intelligence, comprehension, and vocabulary without regard for the teaching method. After 20 sixth graders completed an intelligence test, an achievement test, and an informal reading inventory, they were randomly selected for experimental group instruction in specific comprehension skills, based on diagnosed needs, or for control group instruction in global comprehension skills. Both groups received equal amounts of instruction for fourteen weeks. Posttest scores show that no significant gain in comprehension was made by either group and that no significant correlations were evidenced between sex, intelligence, and gain in comprehension. These findings leave unanswered the question of what teaching mode is more effective for reading comprehension development, and raise the question of the significance for vocabulary as a factor contributing to comprehension development. (Author/RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED150554

Dr. Reta D. Hicks
Associate Professor of Education
Western Kentucky University
Bowling Green, KY 42101

Ms. Eula E. Monroe
Assistant Professor of Education
Jones-Jaggers Lab School
Bowling Green, KY 42101

A Comparative Analysis Among the Variables of Intelligence, Sex, and Gain Made in Comprehension of Sixth Year Students When Taught Global or Specific Comprehension Skills

Dr. Reta D. Hicks
Western Kentucky University

Ms. Eula E. Monroe
Jones-Jaggers Lab School

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Reta D. Hicks
Eula E. Monroe

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

CS003 920

A Comparative Analysis Among the Variables of Intelligence, Sex, and Gain Made in Comprehension of Sixth Year Students When Taught Global or Specific Comprehension Skills

Need for Study

Authorities in the field of reading define comprehension in various terms. Some authors (Bond & Tinker, 1967; Williams, 1959; McCanne, 1966; Aaron & Callaway, 1964; Dallmann, Rouch, Chang, & DeBoer, 1974) give lists of specific comprehension skills. These lists may be comprised of as few as 13 skills or as many as 51. Various tests of comprehension (Fountain Valley Teacher Support System in Reading, 1975; New Developmental Reading Tests, 1968) assess many specific comprehension skills and may suggest material for remediation. A taxonomy of comprehension skills developed by Barrett (1972) identified four major classifications of comprehension abilities and listed tasks within each classification. The intent as stated was that "the tasks listed within each category . . . should not be thought of as discriminate subabilities to be specifically developed . . ." (Barrett, 1972); however, it is difficult to perceive the 23 tasks as other than separate subskills to be developed through questioning techniques.

An opposing viewpoint indicates that comprehension is composed of factors rather than specific skills. Spache and Spache (1969) stated that studies utilizing factor analysis identified three components of the comprehension act: 1) a word factor; 2) a relationship factor; and 3) a reasoning factor. Davis (1968, 1972) identified five factors:

1) word memory; 2) inferring from context; 3) literal interpretation of details; 4) inferring from content; and 5) recognizing author's tone, mood and attitude. Spearritt (1972) analyzed Davis's data and concluded that literal interpretation of details and inferring from context could be subsumed under the category of following passage structure. Spearritt and Davis agreed that reasoning in reading and word knowledge were the two most important factors in comprehension; Davis (1972) stated that approximately 89 percent of the variance in comprehension could be accounted for by these two factors.

A related if not separate premise suggests that comprehension skills tend to cluster around several problem-solving abilities and are not identifiable as discrete skills (Beery, 1967).

A third major viewpoint, promulgated by Socher (1959) and others, has been that comprehension may not be several discrete and specific skills but may be a more general process, global in scope. Many models of reading (Cleland, 1965; Robinson, 1966; Spache, 1963) depict comprehension as a complex thinking process utilizing various operations simultaneously; it is evident that these experts do not perceive comprehension as a set of discrete skills but rather a global process (Spache, 1969).

Purpose

In this study the following questions were investigated:

1. Will there be a significant difference in comprehension achievement scores for sixth grade Ss instructed in comprehension skills diagnosed as areas of need and for Ss who received

instruction in global comprehension skills?

2. What is the relationship between sex, level of intelligence and gain made in comprehension when taught global or specific comprehension skills?
3. What is the correlation among the factors of intelligence, comprehension and vocabulary when method of teaching is disregarded?

Sample

Twenty-three sixth year students from a small southcentral Kentucky school of approximately 200 students were selected for participation in this study. The population of the school is primarily comprised of students from middle to upper-middle socioeconomic levels.

Procedures

The Lorge-Thorndike Intelligence Test, Levels A-H (1969) and the California Achievement Test, Form B (1970) were administered by the researchers to a group of 23 sixth grade students assigned to a self-contained classroom unit. Following group testing an informal reading inventory constructed from the American Book Company basal series (1968) was administered by a trained assistant to ascertain instructional reading levels. At this point, three students were eliminated from participation in the study because their instructional reading levels were not within the range of available materials.

The twenty remaining Ss were randomly assigned to an experimental or control group. Specific comprehension skills needs were assessed

for the experimental group by utilization of the appropriate levels of the Fountain Valley Teacher Support System in Reading (1975). No diagnosis of specific comprehension skills needs was made for the Ss in the control group.

A record sheet for the Ss in the experimental group was constructed, listing the specific skills needs as identified by the diagnostic materials. Prescriptions from one or more of the instructional materials were recorded for each of the skills needed by individual Ss in the experimental group. Either or both of the researchers were available during the skills instruction time to give directions and assistance. As each grade level of skills was mastered, the next higher level of diagnosis was completed by the Ss and evaluation and further prescriptions were made by the researchers.

The control group received no diagnostic testing; each of these Ss was assigned comprehension materials commensurate with instructional reading level. These materials were the same as those used by the control group; the Ss chose from one of the materials for each week's work, varying the choice of materials from week to week during the fourteen-week study.

Materials

Comprehension skills were developed through activities selected from the Specific Skills Series (1971, 1973), the Macmillan Reading Spectrum (1964), Reading for Concepts (1970) and Reader's Digest Reading Skill Builders (1967). In addition, appropriate activities were selected from basal series materials and Continental Press duplicating masters.

Limitations

Three major limitations concerning this study may be noted: 1) the small sample size; 2) the absence of Ss categorized as low in intelligence; and 3) the limited socioeconomic range of the participants in the study.

Analysis of Data

A t test was applied to determine any difference between pre and post vocabulary and comprehension scores.

A three-factor analysis of variance design was utilized to determine the relationships among these factors: 1) intelligence (high, 111-129; average, 99-110); 2) sex; and 3) membership in either the control or the experimental group.

Spearman's rank difference correlation method was used to determine the correlations among intelligence, comprehension and vocabulary when group membership was ignored.

Findings

One of the most important findings of this study may have been the lack of significant change in comprehension scores for either the experimental or the control group. Both groups had participated in 34 forty-five minute work blocks over a fourteen-week period in materials designed to teach comprehension. This finding may suggest that gain in comprehension as measured by standardized achievement tests is more gradual than expected or that the skills taught may not have been those measured by the achievement test administered.

It may also suggest that independent work on isolated comprehension skills may not be the most effective way to improve comprehension. Perhaps more research attention should be given to the improvement of reading comprehension through the development of literal, interpretive and problem-solving levels of thinking by teacher-directed questioning techniques.

The three-factor analysis of variance evidenced no significant relationships among the variables of intelligence, sex and gain made in comprehension when taught global or specific comprehension skills. A difference may have been evidenced with the inclusion of Ss classified as low in intelligence or with a wider range of socioeconomic levels.

Spearman's rank difference correlation indicated a correlation of .51 between vocabulary and intelligence, .59 between comprehension and intelligence, and .96 between vocabulary and comprehension when group membership was ignored. Many research findings indicate a high relationship between vocabulary and intelligence; the .96 correlation between comprehension and vocabulary found in this study may be attributed to the ranking of scores used in the Spearman technique rather than actual differences which might have occurred with another correlational technique. Perusal of the raw scores seemed to indicate that the control group gained slightly in vocabulary while the experimental group regressed; the control group regressed in comprehension while the experimental group gained. This observation may be related to the psycholinguistic premise that wide reading is one of the best ways to improve vocabulary. It may also indicate that when teaching comprehension

by a diagnostic and prescriptive method, there must be built-in provisions for vocabulary development. In addition, it may substantiate the idea (Shafer, 1978) that three aspects of memory must be involved in the act of comprehension: 1) "visual image" or sensory store which lasts only a second; 2) short term memory which can hold four or five bits of information for a few seconds; and 3) long term memory which is a careful selection of one item every five seconds from the short term memory store. The nature of vocabulary acquisition is indeed that of long term memory.

The results of this study left open the question of the most effective teaching modes for the development of reading comprehension at the intermediate level and raised the question of the significance of the contribution of vocabulary to comprehension development. Future research utilizing a less homogeneous sample should be conducted to investigate these questions.

Selected References

Aaron, I. E., & Callaway, B. Teaching the comprehension skills. Teaching Comprehension Skills, Georgia State Department of Education, 1964.

Barrett, T.C. Taxonomy of reading comprehension. Reading 360 Monograph. Lexington, Massachusetts: Ginn, 1972.

Boery, A. Forging ahead in reading. Convention Proceedings of the International Reading Association, 1967 (12,Pt. 1).

Bond, G., & Tinker, M. Reading difficulties: their diagnosis and correction. New York: Appleton-Century-Crofts, 1967.

California achievement test. New York: McGraw-Hill, 1970 (Form B).

Cleland, D. L. (Ed.) A construct of comprehension. Reading and Inquiry, 1965, 10, 59-64.

Dallmann, M., Rouch, R., Chang, L., & DeBoer, J. The teaching of reading. (4th ed.) New York: Holt, Rinehart and Winston, 1974.

Davis, F. B. Research in comprehension in reading. Reading Research Quarterly, 1968, 3, 499-545.

Davis, F. B. Psychometric research on comprehension in reading. Reading Research Quarterly. 1972, 7, 628-678.

Fountain valley teacher support system in reading. (5th ed.) Huntington Beach, California: Richard L. Zweig Associates, 1975.

The Lorge-Thorndike intelligence tests. Boston: Houghton-Mifflin, 1969 (Form 1, Levels A-H).

McCanne, R. Use of a checklist of reading skills with migratory children. Colorado State Department of Education: Office of Instructional Services, 1966.

New developmental reading tests. Chicago: Lyons and Carnahan, 1968.

Robinson, H. M. The major aspects of reading. Reading: Seventy-Five Years of Progress, Chicago: University of Chicago, 1966, No. 96.

Shafer, R. E. Will psycholinguistics change reading in secondary schools? Journal of Reading, 1978, 21, 305-316.

Socher, E. E. The nature of critical reading. Elementary English, 1959, 41, 47-58.

Spache, G. D. Toward better reading. Champaign, Illinois: Garrard Publishing, 1963.

Spache, G. D., & Spache, E. B. Reading in the elementary school. (2nd ed.) Boston: Allyn and Bacon, 1969.

Spearritt, D. Identification of subskills of reading comprehension by maximum likelihood factor analysis. Reading Research Quarterly, 1972, 8, 92-111.

Williams, G. Critical reading in basal readers. Elementary English, 1959, 41, 323-330.